

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

**Remarks:**

Applicants have read and considered the Office Action dated February 6, 2006 and the references cited therein. Claims 38, 47, 52, 58, 63-66 and 82 have been amended. New claims 83-84 have been added. Claims 1-37, 48-50, 55-57, 60-62 and 76-78 have been cancelled without prejudice or disclaimer. Claims 67-75 have been withdrawn. Claims 38-47, 51-54, 58-59, 63-66 and 79-84 are currently pending.

In the Action, claims 38 and 40-42 were rejected as being unpatentable over Brumat in view of Green. The Action states that Brumat does not disclose fruit thinning after shoot thinning with a mechanical fruit thinner. The Action asserts that Green discloses a fruit thinner used after shoot thinning and that it would have been obvious to modify the apparatus of Brumat by using the fruit thinner of Green so as to use more effective tools for each operation.

Claim 38 has been amended and recites mechanical pruning using a first tool as a mechanized pruner, shoot thinning using a second tool as a mechanized shoot thinner, and fruit thinning after shoot thinning using a mechanized fruit thinner. Claim 38 further recites that the first tool, second tool and mechanized fruit thinner are mounted to a vehicle configured for mechanized pruning, shoot thinning and fruit thinning respectively, while the vehicle moves through the vineyard. Applicants assert that Green only shows a hand held wand that is used for removing peaches from a tree. The wand is not adapted for being mounted to a vehicle and fruit thinning while a vehicle moves along rows of a vineyard. The Green wand suffers from other shortcomings of the prior art in that the device is labor intensive as it is held and operated by a person. The operator must walk from tree to tree and hold the wand while each individual peach is removed. Greater height is achieved by standing on a platform which may be moved from location to location but is not configured for conducting thinning while moving. The wand of Green is intend for operator selectable precision removal of some fruit that is possible only by an instrument being held and moved by an operator and is not combinable for mounting on a vehicle. Mechanized fruit thinning while moving along rows of a vineyard does not allow such

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selective precision and is not adaptable for such an instrument. Applicants assert that claim 38 and the claims depending therefrom patentably distinguish over the combination of Brumat in view of Green.

Claims 39 and 43-46 were rejected as being unpatentable over Brumat in view of Green and further in view of Hiyama et al. Applicants assert that the claims depend from claim 38, which is believed to be allowable for the reasons discussed above. Moreover, Hiyama et al. fails to disclose or suggest the tools and steps recited in the claim and neither teaches nor suggests the mechanized fruit thinning. Applicants assert that the combination of references fails to achieve the recited invention. Applicants assert that claims 39 and 43-46 therefore patentably distinguish over the combination and request withdrawal of the rejection.

Claims 47, 51, 52, 55-58 and 60-62 were rejected over 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and further in view of Mead et al. The Action states that Mead discloses leaf removal and that it would have been obvious to modify the combination. Applicants assert that claim 38 patentably distinguishes over the combination of Brumat, Green and Mead. For the reasons stated above, the method is neither shown nor suggested. Mead fails to address the shortcomings of the prior art. Moreover, claim 52 has been amended to recite that the mechanical pruner, mechanical shoot thinner, mechanical fruit thinner and slapper or breaker unit are coupled to a vehicle configured for mechanical operation while the vehicle moves through the vineyard. Applicants assert that the combination of prior art fails to teach or suggest such a method. None of the references teach any sort of fruit thinner that may be utilized for mounting on a vehicle and movement while in operation. Green teaches only a hand held wand that must be positioned while being held up by the operator. The present invention provides for faster mechanization of the cultivation of grapes that is neither shown nor suggested by the prior art. Applicants assert that claim 52 patentably distinguishes over the references.

Claims 55-57 have been cancelled without prejudice or disclaimer. Moreover, claim 58 has been amended and recites mechanized grape cultivation that is neither shown nor suggested

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by the prior art. Claim 58 recites among other things that the mechanical pruner, mechanical shoot thinner, mechanical fruit thinner, mechanized leaf removal machine and mechanical slapper or breaker are coupled to a vehicle and configured for mechanical operation while the vehicle moves through the vineyard. Applicants assert that none of the prior art teaches or suggests an operable mechanized fruit thinner that may be coupled to a vehicle and pulled and moved through the vineyard while in operation. Green shows only a hand held unit that must be held and is walked from tree to tree by the operator, but is not adaptable for faster movement along the rows in a vineyard. The present invention provides for conducting all of the necessary steps with mechanized devices while moving through the vineyard and eliminates the high labor costs of the prior art. Claims 60-62 have been cancelled without prejudice or disclaimer. Applicants assert that claims 47, 51, 52 and 58 patentably distinguish over the prior art.

Claim 48 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Hiyama et al. Claim 48 has been cancelled without prejudice or disclaimer.

Claims 53, 59 and 63-66 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and Mead et al., and further in view of Hiyama et al. Claims 53 is believed to be allowable for the same reasons discussed above with regard to claim 52 as well as others. Claim 59 is believed to be allowable for the reasons discussed above with regard to claim 58 as well as others. Applicants assert that claims 53 and 59 are therefore allowable. Although claims 63-66 were rejected as being unpatentable over Brumat in view of Green and Mead and further in view of Hiyama et al., Applicants note that the rejection of these claims is not discussed in this section of the Action.

Claim 54 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and Mead et al., and further in view of Oldridge. Claim 54 depends from claim 52 which is believed to be allowable for the reasons stated above. Applicants note that Oldridge fails to address the shortcomings of the prior art. Applicants assert that claim 54 is allowable over the prior art for the reasons discussed above.

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Claims 63-66 and 78-82 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and Mead. The Action asserts that it would have been obvious to modify the individual steps at the time of implementation depending upon growing practices to use different trellis systems depending upon availability and ease of use. However, Applicants assert that the prior art fails to teach or suggest the use of a mechanized hand-held free fruit thinning device as recited in claim 63 as well as the combination of steps with the various devices. Applicants assert that similar reasons apply to claim 64.

Claim 65 recites that steps with a mechanical pruner, mechanical shoot thinner, mechanical fruit thinner, leaf removal machine, mechanical pruning unit, mechanical harvester coupled to a vehicle and configured for mechanical operation while the vehicle moves through the vineyard. None of the prior art teaches or suggests all of the recited steps with the mechanized devices and configured for coupling to a vehicle being moved through the vineyard while in operation. Applicants assert that claim 65 recites a method that provides quality standards that are not possible with the prior art or any combination thereof.

Claim 66 recites dormant pruning and shoot thinning on a Smart-Dyson Ballerina trellis with a first shoot thinner adapted to shoot thin on an upper part of the ballerina and a second shoot thinner adapted to shoot thin on a lower part of the ballerina spaced above the ground. The Office Action alleges that Brumat teaches that shoot thinning is a form of bud/sucker removal. Applicants assert that buds and suckers are not the same as shoots in the art and are differentiated throughout the viticultural art. Suckers are associated with growth rising upward from the ground in vineyard cultivation. Webster's New Collegiate Dictionary defines a "bud" as: a small lateral or terminal protuberance on the stem of a plant *that may develop into a flower, leaf or shoot*. One of ordinary skill in the art readily understands that difference between the recited mechanized shoot thinning and bud removal of Brumat. Claim 66 recites that the shoot thinning occurs on an upper part and lower part of the ballerina but spaced above the ground. Applicants assert that the prior art fails to teach or suggest true shoot thinning as understood in the art.

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Claim 78 has been cancelled without prejudice or disclaimer.

Claims 79 and 80 recite further features of the invention. Applicants assert that claims 79 and 80 depend from claim 28 and are allowable for the reasons stated above. Claim 81 recites that the pruning and shoot thinning are coordinated to achieve a predetermined low density end yield. Applicants assert that claim 81 is neither shown nor suggested by the prior art. The Office Action asserts that the method of claim 81 would be obvious but such coordination and low density yield are not discussed or shown in the prior art. Applicants assert that claim 81 patentably distinguishes over the prior art.

Claim 82 has been amended and recites that the shoot thinning removes shoots below the grapevine's cordon and spaced apart from the base of the grapevine. Although the Office Action asserted that Brumat shows shoot thinning, Applicants note that the Action asserts that bud removal and sucker removal are equivalent. Applicants assert that claim 82 differentiates over sucker removal that is close to the ground. Moreover, buds are not shoots and Applicants assert that one of ordinary skill in the art would understand the difference between shoots and buds. Applicants assert that claim 82 therefore patentably distinguishes over the prior art.

New claim 83 recites a mechanized method for vineyard cultivation comprising mechanical pruning using a hand-held free first tool as a mechanized pruner, shoot thinning uses a hand-held free second tool as a mechanized shoot thinner, and fruit thinning after shoot thinning using a hand-held free mechanized fruit thinner. Applicants assert that the prior art neither teaches nor suggests the recited devices. Moreover, the method steps and devices are neither shown nor suggested by the prior art or any combination thereof. Applicants assert that the method of claim 83 patentably distinguishes over the prior art.

Moreover, claim 84 recites that the first tool, second tool and mechanized fruit thinner are mounted to a vehicle configured for mechanized pruning, shoot thinning and fruit thinning respectively, while the vehicle moves through the vineyard. As discussed above, this is neither

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shown nor suggested by the prior art. Applicants assert that claim 84 patentably distinguishes over the prior art or any combination thereof.

A speedy and favorable action in the form of a Notice of Allowance is hereby solicited. If the Examiner feels that a telephone interview may be helpful in this matter, please contact Applicant's representative at (612) 336-4728.



Respectfully submitted,

MERCHANT & GOULD P.C.

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